irritation, and do no possible good. Under such circumstances the pad and belt, modified according to the nature of the case, may be employed; and be it clearly understood, that it is not against the *proper* but against the *indiscriminate* use of this contrivance that I am speaking.

Very efficient relief can be afforded in most cases by means of pessaries, the principal varieties of which consist of the stem, ring, and ball pessaries. The first of these is more adapted to cases where there has been extensive laceration of the perinæum, or inordinate relaxation of the parts; the second is useful for married women in mild cases, but not in severe ones, for then it is almost sure to come down, and frequently gives much pain from its turning edgeways. The ball pessary is an exceedingly useful instrument, and possibly the most efficacious of all; it scarcely ever produces pain or irritation, and generally affords perfect support and immediate temporary relief in some of the worst cases; at first it cannot always be retained where there is much relaxation, and on this account a belt should be worn with a string attached to the tape of the pessary, in order to prevent its dropping out, and to avoid the necessity of wearing a napkin. After a time it produces a certain amount of irritation, or rather stimulation, sufficient to cause an increased constriction of the sphincter vaginæ, marked by pain and difficulty in removing and introducing the instrument; astringent injections now assist this tendency to cure, and increase the constriction of the vaginal mucous membrane, as well as lessen the discharge. The object here is to show what these instruments *can* do, and therefore the most unfavourable cases are mentioned, where every obstacle is placed in our way; where the duration or nature of the malady, and the circumstances of the patient render the treatment difficult, and shut out the possibility of perfect rest in the recumbent posture, so essential and beneficial in the most trivial examples of this complaint.

Case I. Mrs. F., aged 51, was admitted 7th March, 1854. She had suffered on and off from procidentia uteri for the last twenty-three years. It came on after her first confinement, and she had had nine children altogether. Four years ago she was delivered of her last child, and since then the uterus had never perfectly returned; it would sometimes go back partially at night, but never completely, and gave rise to most distressing bearing down, accompanied with dragging pains. Micturition was accomplished with difficulty, from the bladder being prolapsed. The catamenia had ceased for two years. The tumour consisted of the uterus and bladder, with a considerable portion of both the anterior and the posterior walls of the vagina; it was dry and somewhat sensitive, but had no appearance of ulceration. With some trouble it was returned, and a full sized boxwood ball pessary was introduced, which gave immediate relief, enabling her to walk home with perfect comfort. Her business was that of a shirt cutter, and required her to stand the whole day; in addition to which the daily bread of her family mainly depended upon her labour, rendering the necessary rest quite impossible. She was, as might be supposed, somewhat weak and debilitated; for which I gave her tonics, and as soon as possible an astringent injection. At first the pessary frequently came down, but by degrees it could be retained the whole day, being removed at night and replaced in the morning; this at the commencement gave rise to no pain, but by the beginning of June pain was experienced from constriction of the sphincter vaginæ, and from that time up to the present she says that she has experienced greater comfort than she had done for years.

Case II. Harriet H., aged 25, a domestic servant, was admitted 1st May, 1854. This patient was delivered last Christmas of a healthy female child in a lying-in hospital, where she remained for three weeks. She stated that she had a bad time, and returned to her mistress' house, where she was laid up for two months longer; she then resumed her work and the womb came down, and had remained in the same state up to the present time. A napkin had been worn constantly, giving some support, but chafing and irritating the tumour; there was much pain in the back, great bearing down, and profuse discharge. The tumour consisted of the same parts as in the last case, but was moist from the discharge, and the mucous membrane over the os uteri was much abraded. The reduction of this tumour gave considerable pain, but the moment the ball pessary was introduced she was able to stand up without any uneasiness, and felt completely relieved. The perinæum had been ruptured to some extent during her labour. Infusion of cascarilla with nitro-muriatic acid was administered internally, but no local astringent was used until the 26th, when the constriction above mentioned was noticed, and decoction of oak bark was employed as an injection. In this case the pessary never came away, but in spite of hard household work it was firmly retained, affording great relief. She did not suckle her child, and menstruation occurred very regularly; and up to the present time she has enjoyed comparative comfort.

During the treatment of this case I was most particularly struck with some of the disadvantages of my favourite boxwood ball pessary; though I look upon it still as a most valuable and useful instrument, I cannot shut my eyes to its palpable defects. The form of the pessary is perfect, and it is most admirably adapted for giving efficient support in these severe cases, but it causes great pain in passing the orifice of the vagina; again, the wood itself becomes soaked and foul from the discharge, and in addition to this, being hollow and perforated, it allows the fluid to pass into its interior. Now to suppose that this always runs out freely is a fallacy, for I have frequently, after menstruation, found the instrument full of fœtid sanguineous fluid, in spite of the numerous apertures, which often become blocked up with tenacious mucus; and between the catamenial periods the same event occurs with the leucorrhœal discharge, giving rise to a very disagreeable odour. The discharges, of whatever nature they may be, do not, as a general rule, pass through, but escape between the external surface of the instrument and the internal surface of the vagina; if the pessary fitted firmly enough to prevent this, it must produce injurious pressure, and probably sloughing, if left in for any time. Such being the case, it occurred to me that an instrument might be made of the same shape, able to give the same kind of support, but sufficiently elastic to avoid all pain when passing in and out of the vagina, equally light if not lighter, and incapable of becoming saturated with the discharges, or of retaining them in its cavity. For this purpose, I employed Mr. Bigg, of Leicester Square, to make an instrument of vulcanised India-rubber filled with air, which might be called the "air-ball pessary"; this is calculated to answer all the good purposes of the other and avoid all its imperfections; it is light, elastic and firm, fills the vagina without producing injurious pressure, and is beautifully clean, from the fact of its being waterproof even to its string, and therefore when washed is as fresh as new.

16, Welbeck Street, Cavendish Square, August 19th, 1854.

CHLORIC ETHER:

ITS PROPERTIES AND USES, ESPECIALLY IN CHOLERAIC AND OTHER FORMS OF DIARRHŒA AND IN CHOLERA.

By GEORGE B. MEAD, Esq.

[*Continued from page* 820.]

It will be seen by comparing the formulæ of the two preparations, chloric ether and chloroform, that in chemical composition there is considerable similarity between them. Their physiological effects upon the animal economy are also analogous; the former being less powerful in its effects either as a stimulant, antispasmodic, or anæsthetic; yet they are identical, the difference being rather of degree than kind.

It may be advisable to mention that in consequence of the great volatility of the ether, it should be carefully preserved in a capped bottle: otherwise the chloride of ethyle

will escape, and the value of the preparation as a drug will be greatly diminished.

I will now consider the physiological effects of the ether upon the human economy, and its *modus operandi*. Pereira* places the ethers in the class *neurotics;* subclass *cerebro-spinals;* order *phrenetics;* group *methystica;* (*μεθυστικα* from *μεθυ* wine.) In this group he includes alcohol, wine, other, and chloroform. He says: "The employment of wine and ardent spirit for the purpose of exhilaration and inebriation is familiar to every one. The ethers produce a similar but more rapid and temporary effect, and I have known intoxication produced by swallowing chloroform."

In the effects of methystica, three degrees may be distinguished. The *first* is that of exhilaration or excitement: this is best seen when the quantity is small. When the dose is larger, this degree constitutes the first stage of operation. Volition and intellect are excited but not otherwise disordered. The *second* degree or stage is that of inebriation, in which both the mental faculties and volition are disturbed as well as excited. There is more or less confusion of intellect or delirium, varying in intensity and character in different individuals. Volition is impaired, there is vertigo, thick speech, and inability to stand or walk; the individual reels or falls about when he attempts to walk. As yet sensation exists, though lessened; sensibility to painful and other impressions being diminished. The *third* degree is unconsciousness or stupefaction. The individual is now insensible, or nearly so, though sometimes capable of being roused when loudly spoken to.

In considering chloric ether, I shall propose dividing its action, so far as I am interested in it as a medicine, into two stages or degrees; considering first its stimulant properties, and secondly, its anodyne and antispasmodic effects.

1. As a stimulant, when a moderate dose has been taken, it increases the action of the heart, as evinced by the pulse becoming fuller and stronger; the countenance flushed; the temperature of the skin and extremities increased; and that it causes also excitement of the nervous system is shewn by the feeling of exhilaration almost simultaneously produced; the breathing also is increased in depth and frequency. These effects upon the animal economy, though well-marked in a state of health, become much more so when from disease or other cause a state of prostration exists. The excitement has been evanescent in its character. When I have used it as a stimulant only, I have found it advisable to administer at first a full dose, and then to keep up the effect by repeated small doses. I have never found it nauseate even the most fastidious, but all have agreed in pronouncing its flavour rather pleasant than otherwise. The same effects are produced by its use in the form of vapour; and it has been used by some as a substitute for chloroform. It was, however, found that a greater length of time was required for producing the anæsthetic effects, the administration of a larger quantity was necessary, and at the same time the insensibility was less profound. For these reasons chloroform has been preferred for the purpose of inhalation; while for internal administration chloric ether is undoubtedly better fitted. It should be mentioned that the state of excitement is not followed by the great nervous depression so frequently seen after the continued use of ether, alcoholic or ethereal stimulants.

2. The property which renders it much more valuable in the treatment of diarrhœas, is the undoubted power it possesses of controlling muscular action, relieving spasm, and exercising an anodyne effect upon the nervous system. It is at once a stimulant and an anodyne. While it rouses the system from the state of prostration, it at the same time, or with no appreciable interval between the two effects, soothes the irritable mucous membrane of the stomach and intestinal canal, by deadening the sensibility of the minute nerve-fibrils so numerous in the papillæ. Frequently in diarrhœa, no sooner is anything received into the stomach than, so irritable are the coats of that organ, it at once passes on into the duodenum, thence to the jejunum and ileum, and then through the larger intestines till it is excreted *per anum*. When this drug is administered, it is not improbable that it may in these cases exercise some direct local influence upon the nerves of these surfaces, by the absorption which takes place while it is passing over them. Some may ridicule this idea; but I have noticed several cases in which it has appeared to me to have had some such effect. In more than one case the patient has stated that he could as it were "feel the medicine passing on", and that "directly it got on to where the pain was it relieved it".

There is another point which I have frequently observed, and which should have some weight when persons in such cases have been treated with opium. So long as they are half stupid from the narcotic effects of the latter drug, they are nearly if not quite free from pain; but no sooner has the narcotism, in a measure, passed off, than the pain returns as violently as before; and often the nerves, having as it were recruited their exhausted power by the temporary abeyance of their functions, become still more susceptible of the influence of stimuli, and the pain in consequence is redoubled in violence. On the other hand, when the constitutional effect of the ether has passed off, the nerves still remain somewhat benumbed and less alive to the influence of stimuli; and in consequence, though the pain may again appear if it be neglected to re-administer the remedy, it will be found less violent in its character, and more readily amenable to further treatment. The same thing has been noticed by myself and others where chloroform has been administered: the patient, for some time after the other effects have passed off, has been found to experience a certain feeling of numbness of the nerves of sensation, his sense of touch has been rendered less acute, and this has continued for hours and even days after the administration of the drug, being very gradual in its subsidence. This effect in the case of chloroform renders it more valuable, from saving the patient some of the after pain which acts so injuriously on the debilitated system.

In administering this drug, it will be found that it is more useful in cases occurring during the prevalence of epidemic diarrhœa than in sporadic cases; the latter being for the most part caused by disorder of the digestive functions, and ceasing upon the removal of the cause, which will generally be readily detected by the skilful practitioner. Cases are of every day occurrence, where the presence of accumulations of crude ingesta in the alimentary canal is the cause of diarrhœa, which is rather to be regarded as an effort of nature to rid the system of the offending matter; and the sealing up the natural outlet and preventing this would rather aggravate the evil. In such cases, the use of purgatives is evidently indicated. After the *prima via* has been well cleared, should a state of morbid irritability of the mucous membrane remain, causing a continuance of the flux and attended with spasmodic pain, then the use of this remedy, from its anodyne effects, would undoubtedly prove beneficial. At my recommendation, many of my medical friends have used it, and it has not unfrequently occurred that they have complained to me that, although in some cases it has answered all their expectations, yet in others it has failed; on investigation, I have invariably found such failure to have arisen from its use in cases where the disorder had been preceded by dyspeptic symptoms of longer or shorter continuance, or been produced by accumulations in the intestines. Neither diarrhœa nor any other disorder can properly be treated empirically; it is incumbent on every one to consider the *cause* before attempting the treatment, and to be influenced in such treatment by the nature of its causes. Many valuable remedies have fallen into disrepute in consequence of their empirical application, not only by the public, but even by members of our profession, which in the present day, notwithstanding the advances which have been made, is not free from this vice. Though none profess the doctrines of the *ἐμπειρικοι* of old, too many from carelessness, not from ignorance, adopt their system of practice.

When choleraic diarrhœa prevails, it will be found that,

* Pereira's Materia Medica, vol. i, p. 198. London: 1853.

for the most part, those attacked by it have previously been in good health; the disorder is evidently not dependent upon visceral derangement, but is caused by the universal prevalence throughout a district or country of some mysterious and subtle principle. What this something is, whether of animal or vegetable origin, and whether it is diffused by means of the atmosphere, water, or in any other manner, I have not the time or inclination to discuss. One thing, however, is certain; it attacks, and acts as an irritant upon the mucous membrane of the intestinal canal; the irritation spreads rapidly over the whole surface; and there is at once an immense outpouring, in the first instance, of the natural secretions from the numerous glands and follicles with which that surface is studded. Soon, however, the secretion is vitiated in character; and, by exaggeration, the action becomes morbid. The difference is in degree, not in kind. As suspension of a natural function may cause disease, so may its exaggeration, as in this instance. The irritation further extends to the muscular coat; its natural actions become exaggerated; its fibres acting powerfully, the vermiform movements are increased, and spasm is produced. Thus we can trace it step by step; but too frequently so rapid is its action, that it appears as if both muscular and mucous coat were simultaneously attacked; nor is this to be wondered at, when we consider the intimate connexion between the two. The symptoms and their causes are at once explained by the consideration of the anatomy and physiology of the affected organs. The pain soon becomes violent, so largely are the intestines supplied with nerves for the most part derived from the great sympathetic system; collapse in consequence speedily comes on, and, unless the disorder stay *per se*, the patient soon sinks into a hopeless condition, and death closes the scene.

It will be obvious, from the symptoms, the modes of treating choleraic diarrhœa may be divided into two great classes. The followers of the one mode seek to carry off the offending matter by the administration of brisk purgatives, and, by removing the *cause*, fairly look forward to the cessation of the *effects*. This plan, which, at the present moment, has become very popular, in consequence of the powerful advocacy of the leviathan of the London daily press, is open to many serious objections, and again and again has been tried and found wanting. One great objection I consider worthy of notice. Though it is undoubtedly possible to eject from the system, in the earlier stages of the disorder, that portion of the poison which has entered, yet we cannot prevent more entering to replace that previously expelled; the patient being still exposed to the same influences which originally caused the disorder. The case, then, will stand thus: the mucous membrane of a previously healthy person is attacked by the poison; at an early period a brisk purgative is administered—say a dose of castor oil; this acts upon the intestinal canal, excites vigorous action, and the poison is expelled, being washed from it as it were by the copious flux; the increased action subsides, and the patient recovers. Now, is it not an established law in physiology, that increased action of any part of the animal economy is followed by a corresponding amount of reaction or debility? Consequently, from the action of the drug and poison, the intestinal canal is rendered still more susceptible to a renewed attack; and, if it should be again affected a second or third time in its debilitated condition, the poison would act upon it with redoubled vigour. Each time the patient would be left in a very much worse condition, and more liable to a recurrence. Moreover, the treatment alone would be sufficient to exhaust the patient's power, especially when it is recollected that one of the first symptoms of choleraic diarrhœa is increased irritability of the muscular fibre and mucous membrane of the intestinal canal, with depression of the vital powers. That he cannot be removed from the influence of the poison, is evident from its prevalence through every part of the affected district. The patient is still as much exposed as he was in the first instance, more liable to the attack, and, what is still more important, the very treatment, by lowering the vital powers and producing increased irritability and debility of the intestinal canal, has rendered him less able to withstand the effects of the poison. To these points I have given serious and anxious attention; of their importance I am so convinced that I invariably exercise very great caution indeed in the administration of purgatives during the prevalence of choleraic diarrhœa.

The second plan of treatment is as follows:—The disease being evidently an exaggeration of the natural functions of the intestinal canal, it is sought to paralyse these actions by the use of morphia, opium, and other anodynes; and so enable them, by blunting the increased sensibility of the innumerable nerve-febrils of the part, to bear up against the influence of the poison, and render the membrane less susceptible to the influence of irritants. From what has been previously stated, it will be evident that chloric ether belongs to this class of remedies.

Though, for the most part, I prefer the latter plan in the treatment of choleraic diarrhœa, yet there are, I am convinced, many cases in which the judicious use of purgatives is highly beneficial; but, in such use, extreme caution is necessary, for reasons already given.

It has not been unfrequently objected by some of my friends, that there are cases in which the patient, previously being in good health, is suddenly seized by the disorder; collapse at once sets in, or with a scarcely appreciable interval; the patient rapidly sinks, and not unfrequently dies within four or six hours from the first seizure. In answer to this, I think it may be fairly observed—

1. That such cases are of extreme rarity of occurrence. It has been asserted upon good authority, that, of an immense number of cases of cholera occurring in the metropolis, which had been carefully investigated by competent persons, with a view to ascertain this point, not one case was found in which there had not been premonitory diarrhœa of considerable duration and more or less intensity. How often do the journals of the day contain announcements of which the following may be considered a fair sample:—"We regret to state that the popular actress, Mrs. Fitzwilliam, expired at six o'clock on Monday evening. She had been indisposed for about a week past with diarrhœa; but, as the attack presented no symptoms of immediate urgency, she neglected to take sufficient precautionary measures, and pursued her professional engagements as usual, and even played on Saturday night week with her usual vivacity. Early on Monday morning, the disorder assumed a serious character, and, in spite of every effort to save her, Mrs. Fitzwilliam sank under the attack at the end of twelve hours." (Weekly paper, Sept. 17th.)

2. We not unfrequently see analogous cases occurring during the heights of epidemics, of the exanthematous fevers, where patients die in a similar manner. Professor Paget specially alludes to these cases, and most practitioners must have met with similar ones. In my notes of his lectures delivered at St. Bartholomew's Hospital a few years ago, I find the following paragraph:—"Cases do occur in which persons die in the very early stages of the malignant eruptive fevers, the very virus appearing to have been so powerful as to destroy the patient." If, then, there are cases during epidemics of scarlatina, variola, and the like, in which, from some idiosyncrasy of constitution, the same virus which in one produces merely a mild malady strikes another down with as rapid and deadly force as the subtle poison of the rattlesnake, can we be surprised to see similar instances occur during the prevalence in an epidemic form of so fearful a malady as the cholera? Because there are cases in the former disorders in which, from the rapidity with which they prove fatal, all attempts at treatment are set at defiance, will any one pretend to say that, in the majority of cases, the patient may not be much benefited by judicious treatment? All must admit that much for good or evil lies in the hands of the practitioner. It is much easier to raise objections to remedies, and point out cases in which they are useless, than to properly and carefully apply them.

3. If the use of chloric ether in such cases can scarcely be hoped to be successful in saving the patient, is there any

other which affords, or appears to afford, any better chance of success? I must confess, after having carefully searched the medical journals, and other publications, books, and pamphlets innumerable, treating upon the subject, I can find none; all seem to acknowledge that such cases, under all known plans of treatment, in the majority of instances, prove fatal.

4. Supposing a patient were so attacked, and seen by a practitioner within a short time from the commencement of the disorder; would not the state of collapse indicate the use of stimulants? Could there be any valid objection to the administration of drachm doses of chloric ether, in water or any other vehicle, every ten or even five minutes? Does not such a plan appear to afford a good chance of success? And, so far as the *rationale* of the treatment is concerned, it cannot be open to objection. Is there any other stimulant the use of which is preferable? If so, I have yet to learn its name, and shall be glad to be put in possession of *facts* proving its claim to such superiority. Save the case I have mentioned, I have never yet met with one in which the collapse was so sudden and complete. Should I be called upon to treat one, I should unhesitatingly adopt this plan, and am convinced, if anything would prove beneficial, it would. At any rate, the mortality under this plan of treatment could not well exceed that under all others.

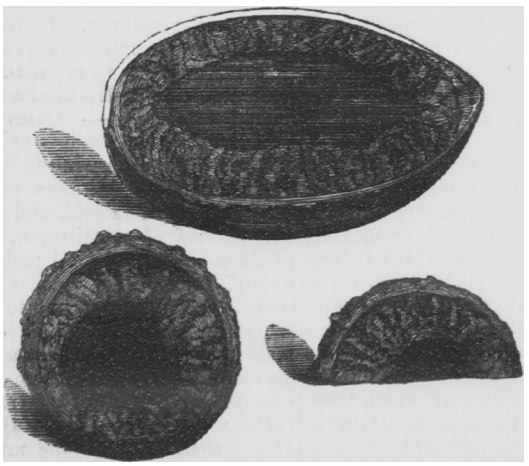
Considering it incumbent upon every member of our profession to do all in his power for the advancement of medical knowledge, I have ventured to lay before my medical brethren my experience in the use of this important remedy. Should these papers be the means of inducing any to give it a fair trial, I should esteem it a favour if they would oblige me with the results of their experience.

Bury St. Edmund's, September 18th, 1854.

CASES OF LITHOTOMY.

By ALLEN DUKE, Esq., Surgeon to the Chichester Infirmary.

Case I. Stephen Sylvester, aged 17 years, was admitted into the Chichester Infirmary on the 1st of August. He had pain and scalding in passing his urine, which contained a large quantity of muco-purulent secretion, occasionally mixed with blood, giving rise to strong suspicions of stone.



On examination, a calculus was readily detected, lying loose in the cavity of the bladder; but, in consequence of the extreme irritability of that organ, and in order to prepare the patient for an operation, he was put under the influence of the decoction of pareira brava, in combination with alkalies and sedatives. This medicine he continued till the 8th of September, on which day I performed the lateral operation, and without difficulty extracted a calculus, weighing eight and a half drachms. In its centre was a piece of firm hazel wood, which had been broken from a stick that accidentally had perforated the rectum and bladder, as the boy was in the act of jumping over a heap of straw in a rickyard, a year previous to the date of his admission; but from the effects of which he had perfectly recovered—the bladder and rectum having healed—the urine passing through its natural passage.

The patient always persisted in saying, from the size of the stick, that it was impossible that a piece could have been broken off, and left in the bladder. It being supposed that the nucleus might probably be a piece of the bark, a transverse section was made, when, to our surprise, a solid piece of wood three-fourths of an inch in diameter was cut through, which, on making a longitudinal section, was found to be about an inch and a quarter in length. (*See woodcut.*)

Respecting the after-treatment of this case, I have no particular remarks to make; suffice it to say, that the patient went on most satisfactorily, with the exception of an attack of diarrhœa, and was discharged cured on the 1st of November; since which time he has remained perfectly well, and has enlisted as a soldier.

Case II. William Bridger, aged 58 years, having for a considerable time suffered from symptoms of gravel and difficulty in passing his water, attended with spasmodic stricture, and occasionally requiring the use of the catheter, was admitted into the Chichester Infirmary on the 31st of July, labouring under the usual symptoms of stone. The urethra offered but slight resistance to the introduction of the sound, and a calculus was easily detected.

A mucilaginous draught, containing bicarbonate of potash and henbane, was ordered to be taken three times a day.

From the date of his admission to the day of the operation, he suffered very severely at times, and frequently required the use of the catheter, his bodily strength gradually declining.

August 10th. The operation was this day performed in the usual manner; but on cutting into the bladder, it collapsed in such a way, that it was utterly impossible by any instrument to discover the stone, which was previously so perceptible. The bladder was injected with tepid water, and repeatedly examined by those present; and, as no stone could be found, the patient, after the lapse of about three quarters of an hour, was removed to his bed. A tube was introduced, and a full opiate administered.

He went on very well till the 13th, when his tongue became dry and brown, and fever of a low type manifested itself. Diarrhœa supervened, and, in spite of every endeavour, he gradually sunk, and expired at 2·30 P.M. of the 17th, seven days after the operation.

Examination of the Body, twenty hours after death. None of the internal organs betrayed any particular disease, except the kidneys and bladder, the cavity of which was in a sloughy state—its coats were greatly thickened, and when opened, a cyst was discovered on the left side, containing four calculi, of the size of common French beans.

By the side of the cyst was a cerebriform cancerous tumour of considerable size, from the upper surface of which sprang a kind of mammary process, which, when the bladder contained a quantity of urine, projected into its cavity, permitting the contact of the stone with the sound; but when it was empty, by the collapsing of its coats, the process rolled into the mouth of the sac, closing it so completely, that it was quite impossible to grasp the stone—clearly accounting for the unsuccessful termination of the operation.

The calculi consisted of lithic acid internally, having an external layer of the triple phosphate.

Chichester, September, 1854.